WHAT IS CLAIMED IS:

1. A polymeric optical device, comprising:

a substrate;

a lower cladding layer formed on the substrate;

at least one core layer pattern formed on a predetermined region of the lower cladding layer; and

an upper cladding layer formed on the lower cladding layer in which the core layer pattern is formed,

wherein the upper cladding layer is composed of at least two sub-upper cladding layers or more, in order to reduce a birefringence by a thermal stress.

2. The polymeric optical device claimed in Claim 1, wherein the core layer pattern comprises a core layer formed on the lower cladding layer and a buffer layer formed on the core layer,

wherein a component of the core layer pattern is a polymer, and the buffer layer is the same as the upper or the lower cladding layer material.

3. The polymeric optical device claimed in Claim 1, wherein the height of the core layer pattern is in the range of 2 to 10 ㎛.

4. The polymeric optical device claimed in Claim 1, wherein each of the substrate, the lower cladding layer, the core layer, and the upper cladding layer is composed of a polymer material, and the polymer material is one material being selected from materials of a fluorinated polyether system, an

acrylate system, a silicon resin system, a polyimide system, and a perfluorinated cyclobutane system.

5. The polymeric optical device claimed in Claim 1, wherein the substrate is one selected from a silicon substrate, a silica substrate, a glass substrate, and a polymer substrate.

6. The polymeric optical device claimed in Claim 1, wherein birefringence of the polymeric optical device is adjusted by the thickness of the sub-upper cladding layer and the number of stack thereof.

7. The polymeric optical device claimed in Claim 1, wherein the surface of the lower cladding layer being contacted with the core layer pattern is placed higher than that of the lower cladding layer being contacted with the upper cladding layer.

8. A method of fabricating a polymeric optical device, comprising the steps of:

forming a lower cladding layer on a substrate;

forming a core layer pattern on the lower cladding layer; and

forming an upper cladding layer on the lower cladding layer in which the core layer pattern is formed,

wherein the upper cladding layer is composed of at least two sub-upper cladding layers or more, in order to reduce a birefringence by a thermal stress.

9. The method of fabricating a polymeric optical device claimed in Claim 8, the step of forming the core layer pattern, comprising the steps of:

forming a core layer on the lower cladding layer;

forming a mask pattern on the core layer;

etching the core layer into a shape of the mask pattern; and

removing the mask pattern,

wherein a portion of the lower cladding is over etched when etching the core layer.

10. The method of fabricating a polymeric optical device claimed in Claim 9, wherein the lower cladding layer is over etched by approximately 0.1 to 3 ㎛.

11. The method of fabricating a polymeric optical device claimed in Claim 9, further comprising a step of forming a buffer layer on the core layer between the steps of forming the core layer and the mask pattern on the core layer.

12. The method of fabricating a polymeric optical device claimed in Claim 8, wherein each of the steps of forming the lower cladding layer, the core layer, and the sub-upper cladding layer comprises steps of coating a polymer layer and curing the polymer layer, respectively.

13. The method of fabricating a polymeric optical device claimed in Claim 12, wherein the step of curing the polymer layer may be performed by means of a thermal curing or an UV curing method.